

Critical Habitat Analysis Framework for Action Agency Projects that are Not Likely to Adversely Affect Atlantic Sturgeon Critical Habitat (i.e. for Informal Consultations)

Background

On August 17, 2017, NOAA Fisheries published a final rule designating critical habitat for the Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic Distinct Population Segments (DPS) of Atlantic Sturgeon. The effective date of the rule was September 18, 2017.

Once critical habitat is designated, section 7(a)(2) of the ESA requires Federal agencies to ensure that any action they fund, authorize or carry out is not likely to destroy or adversely modify (D/AM) that habitat. Destruction or adverse modification is defined as “a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features.”

Federal actions with action areas that overlap with designated critical habitat but have no effect on those features are not subject to ESA section 7 consultation for that critical habitat. Possible conclusions of an ESA section 7 consultation are that the proposed action: (A) may affect, but is not likely to adversely affect the critical habitat; (B) is likely to adversely affect the critical habitat but is not likely to destroy or adversely modify the critical habitat; or (C) is likely to destroy or adversely modify the critical habitat. Conclusion A can be made in a letter of concurrence while conclusions B and C must be reached through analysis in a biological opinion.

The Greater Atlantic Regional Fisheries Office (GARFO) Protected Resources Division (PRD) Section 7 team has put together this framework to assist you in completing your analysis to determine whether an action that may affect critical habitat is “not likely to adversely affect” critical habitat; that is, that all effects to critical habitat are insignificant, discountable or wholly beneficial. If, after following the steps provided in this framework, you determine that the effects are not insignificant or discountable (i.e., adverse effects), the action will need further review and a Biological Opinion may need to be produced (formal consultation).

Critical Habitat for Atlantic sturgeon

The key conservation objective of critical habitat designated for Atlantic sturgeon is to increase the abundance of each DPS by facilitating increased successful reproduction and recruitment to the marine environment. Atlantic sturgeon critical habitat consists of four physical or biological features (PBFs):

- 1) Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;

- 2) Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 parts per thousand and soft substrate (e.g., sand, mud) between the river mouth and spawning sites for juvenile foraging and physiological development;
- 3) Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) unimpeded movements of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary, and; (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g., at least 1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river, and;
- 4) Water, between the river mouth and spawning sites, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13° C to 26° C for spawning habitat and no more than 30° C for juvenile rearing habitat, and 6 mg/L or greater dissolved oxygen for juvenile rearing habitat).

In our region, 14 critical habitat units are designated (five each for the Gulf of Maine and Chesapeake Bay DPSs and four for the New York Bight DPS). In each of these units, all four of the PBFs are present.

Steps for Analysis

An activity is not likely to adversely affect listed species or their critical habitat if all effects¹ are wholly beneficial or the effects are insignificant (so small that they cannot be meaningfully measured, evaluated or detected) and/or discountable (the effects are extremely unlikely to occur). For critical habitat, you will analyze all potential effects of the action in a similar manner to how the effects to individuals of the species are analyzed. (For guidance on analysis for listed species, see:

https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/garfoesa_section_7_technical_guidance_050216.pdf).

The analysis begins by determining if the action area² overlaps with a portion of one or more critical habitat units. If it does, you will identify which of the four PBFs are present within the action area and which parts of the activity under consultation may affect one or more of the features. You then analyze the effects to the PBFs, taking into account two important things: One is to analyze the effects to each PBF taking into account not only the feature’s physical or biological component (e.g., aquatic habitat with soft substrate and salinity between 0.5 and 30

¹ “effects of the action” includes direct and indirect effects of the proposed action itself, plus effects of any interrelated/interdependent activities. Consider effects not only during the action, but any effects that extend beyond the temporal scope of the action (that is, effects that will continue once the activity under consultation is complete).

² The action area is the geographical area in which all direct and indirect effects of the action occur; it is not necessarily limited to the immediate area involved in the action.

ppt), but also the feature’s conservation function, as described in the final rule for the critical habitat designation. For example, a feature might be described in the rule as “soft substrate within a salinity gradient of 0.5 to 30 ppt *for juvenile foraging and physiological development.*” In that case, the analysis would consider the effect on soft substrate within the salinity gradient and its function in juvenile development (that is, the ability of the combination of the soft substrate and salinity gradient to support foraging and physiological development), not just the effect on the soft substrate itself. The other important consideration is that you need to analyze the effects to each PBF in light of the value each one provides to the conservation of the species in the action area. For example, if the soft substrate in the action area is within the salinity gradient and provides excellent forage in support of juvenile development, that feature in the action area may have high value to the species. On the other hand, if soft substrate in the action area is within the salinity gradient, but is laden with toxins and does not contain quality forage in support of juvenile development, then that feature may have low value to the species in the action area. When considering effects on a feature, be sure to also consider the effect of the action on an individual’s ability to access the feature, temporarily or permanently. Things that might preclude access, temporarily or permanently, include a physical barrier like a dam or series of sheet piles, or sound/pressure waves, heat plumes, etc. When considering effects on a feature, be sure to also consider the effect of the action on the action area’s ability to develop the feature over time.

In order to make an “NLAA” determination, you must be able to conclude that effects to the features, inclusive of their conservation function, and in light of their value to the species in the area, are insignificant and discountable.

To determine if an action is not likely to adversely affect critical habitat, follow these steps:

- 1) Determine if the action area overlaps with a portion of one or more units of critical habitat designated for one or more DPS of Atlantic sturgeon. See maps located here: <https://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/index.html>. If overlap exists, proceed to step 2 of this analysis. If not, note in your consultation document that the action area does not overlap with critical habitat designated for any DPS of Atlantic sturgeon.
- 2) Identify the PBFs that are present within the action area.
- 3) Identify the effects produced by the action (e.g., pile driving results in increased turbidity, underwater noise and a loss of benthic habitat) both during the activity and later in time (e.g., a new pier may result in an increase in vessel traffic in the action area the following summer).
- 4) For each PBF in the action area, describe the PBF in the action area to provide context with regard to its value for the species. This is similar to explaining when and how individuals of a listed species use the action area. For example, in considering PBF 2, you might note that: salinity is greater than 0.5 ppt year round; the action area contains a few small, isolated patches of soft substrate; and juveniles are present year-round.
- 5) Considering each PBF separately, determine how the action may affect the PBF.

- a) For each PBF, analyze how each effect (e.g., noise, turbidity) may affect the PBF in light of the value it provides to the species in the action area.
 - i) First, describe how the action impacts the physical habitat component described in the PBF (e.g., for PBF 1 – hard substrate in low salinity water; for PBF 2 – soft substrate within the transitional salinity zone; for PBF 3 – barriers to passage, including sufficient water depth and flow; and, for PBF 3 – water temperature, salinity and dissolved oxygen);
 - ii) Then, consider how any alteration to the habitat may affect the conservation function provided by that physical habitat component (e.g., for PBF 1 - settlement of fertilized eggs, refuge, growth, and development of early life stages; for PBF 2 - juvenile foraging and physiological development; for PBF 3 - unimpeded movements of adults to and from spawning sites; seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary, and; staging, resting, or holding of subadults or spawning condition adults; for PBF 4 - spawning; annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment.
 - iii) When considering effects on a feature, be sure to also consider the effect of the action on an individual’s ability to access the feature, temporarily or permanently. For example, an action that includes deployment of a silt curtain might temporarily limit access to some areas of soft substrate in the action area. Be sure to also consider the effect of the action on the action area’s ability to develop the feature over time. We anticipate that this part of the analysis is most relevant when a PBF is not present in the action area,³ or the PBF is present but is in a degraded state. For example, if the action area contains spawning habitat, but water quality in the action area is poor and does not support successful spawning and development of eggs (e.g., DO is chronically impaired and too low to support egg development), you would describe the degraded condition of PBF 4 and then analyze how your action would impact the action area’s ability to develop PBF 4 over time. For example, in the case of a dock construction project that is not anticipated to impact DO in the short or long term, you would conclude that the action would not impact the action area’s ability to develop PBF 4 over time. However, in the case of a discharge of nutrients that may affect DO in the action area, you would analyze whether the discharge would impact the action area’s ability to develop PBF 4 over time and, if so, whether the effect is insignificant (i.e., so small it cannot be meaningfully measured, detected, or evaluated).
- 6) Draw conclusions about the effects of the action on each of the PBFs (i.e., no effect, insignificant, discountable or wholly beneficial)

³ In nearly all cases, the action area will be small enough that it does not contain both PBF 1 and PBF 2 (which cannot coexist at the same point). If the action area overlaps exclusively with the reach of the river with PBF 1 (i.e., salinity less than 0.5 ppt), you do not need to consider how the action would impact the action area’s ability to develop PBF 2 over time, and vice versa.

- a) If the action will not affect the PBF’s ability to fulfill its identified purpose/function, then the action will have no effect on that PBF.
 - b) If the action may alter a PBF, but the effect of the alteration on the ability of the PBF to provide its conservation function in the action area is so small that it cannot be meaningfully measured, detected or evaluated, then conclude the effect is insignificant. In other words, an effect is insignificant when a person would not be able to meaningfully measure, detect, or evaluate the change in the function of the PBF(s) for the conservation of the species in the action area.
 - c) If either (i) the action is extremely unlikely to alter the physical component of the PBF in the action area, or (ii) the action will alter the physical component of a PBF, but it is extremely unlikely that the alteration will impact the ability of the PBF to provide its conservation function in the action area, then conclude the effect is discountable.
 - d) If all effects to the PBF, which includes its conservation function, will be wholly beneficial, then conclude the effects are beneficial.
- 7) Reach a conclusion about the effects of the action on the critical habitat in the action area
- a) If all effects to all PBFs will be beneficial, insignificant or discountable, then conclude the action is not likely to adversely affect the critical habitat.
 - b) If you cannot make an “NLAA” determination because effects to one or more of the PBFs are more than insignificant or discountable (i.e., adverse), then a formal consultation, resulting in a biological opinion, is likely to be necessary (unless the action is modified so that those adverse effects will not occur). Remember that a biological opinion for critical habitat does not contain an Incidental Take Statement and there are no Reasonable and Prudent Measures or Terms and Conditions for adverse effects to critical habitat; a Reasonable and Prudent Alternative is only developed if an action is likely to destroy or adversely modify the critical habitat.

Remember, all conclusions must be based on the best available scientific information and supported by the facts of the particular activity and action area. Avoid generalizations and conclusory statements; always support your conclusions with an explanation that ties the facts together in a logical manner.